IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: Confirmation No. 3748

Kenneth W. Shirriff et al. Group Art Unit No.: 2141

Serial No.: 10/663,474 Examiner: Gillis, Brian J.

Filed: September 15, 2003

For: METHOD AND SYSTEM FOR EVENT NOTIFICATION

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APPEAL BRIEF

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed on February 29, 2008.

I. REAL PARTY IN INTEREST

Sun Microsystems, Inc. is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-26 and 45-60 are pending in this application, were finally rejected and are the subject of this appeal. Claims 27-44 were canceled during prosecution.

IV. STATUS OF AMENDMENTS

No amendments were filed after the final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present application contains independent Claims 1, 18, 45 and 53. Independent Claim 1 is directed to a system for event notification; independent Claim 18 is directed to a network for event notification; and independent Claim 45 is directed to a machine-implemented method, with independent Claim 53 directed to the corresponding apparatus and is written in means plus function form. Each independent claim is discussed briefly below.

CLAIM 1

Claim 1 provides an advantageous event notification system, which enables a remote computing system to interact with a server only when it is likely that the server has a set of updated status information for a node. According to Claim 1, a first node detects a situation of interest on the first node, and in response thereto, generates a first event. The first node then sends information pertaining to the first event to an event buffer to be stored therein. A remote computing system polls the event buffer for new events. Initially, the remote computing system displays a first set of status information for the first node that was previously obtained from a server. As the remote computing system polls the event buffer, it detects the first event, which indicates that a situation of interest has occurred on the first

node. In response to detecting the first event, the remote computing system interacts again with the server to obtain a set of updated status information for the first node. The remote computing system then displays the updated status information. By monitoring the event buffer for new events, and by interacting with the server in response to an event in this manner, the remote computing system can determine when it is likely that the status information for the first node has been updated, and can interact with the server only when it is likely that the server will have updated status information for the first node. By doing so, the remote computing system minimizes the amount of times that it has to interact with the server, which in turn reduces the load on the server and the traffic on a network. (Specification at Page 4, line 14 through Page 6 line 1; Page 11, line 4 through Page 13 line 8; Page 15 line 1 through Page 15 line 10; Page 22, line 1 through Page 23 line 23, and Figs. 2-3 and 6).

The system of Claim 1 offers significant advantages over prior approaches. Typically, monitoring nodes through a remote system requires that the remote system interact with a server on a periodic basis to regularly obtain status information for the nodes. Because the remote system interacts with the server on a periodic basis, it may interact with the server even when the server does not have any updated status information for the nodes. This unnecessary interaction with the server can create significant network congestion. To reduce network congestion, users in the past have reduced the frequency of accessing the server; however, this has caused status information for the nodes to not be updated as quickly as would be desired. With the system of Claim 1, these problems are eliminated. By interacting with the server in response to detecting events on the event buffer, the remote computing system of Claim 1 interacts with the server only when it is likely that the server

will have updated status information for the first node. At the same time, the updated status information for the first node is obtained very shortly after it is available. Thus, the remote computing system of Claim 1 is able to obtain updated status information for the first node in a timely fashion without unnecessarily congesting the network.

CLAIM 18

Claim 18 provides a highly useful network, in which nodes of a cluster forward events through the cluster to a common buffer, so that a remote event monitor need only interact with the server after a pertinent event is detected in the buffer. According to the approach recited in Claim 18, an event forwarding mechanism in each node of a cluster forwards detected events to each other node. An event buffer of the cluster receives and stores each event from a node from the event forwarding mechanism. A remote event monitor periodically polls the event buffer for changes in pertinent events. In response to detecting one or more pertinent events, the remote event monitor first causes updated status information pertaining to one or more nodes in the cluster to be obtained from a server. Then, the remote event monitor causes the updated status information to be displayed. (Specification at Page 4, line 14 through Page 6 line 1; Page 11, line 4 through Page 13 line 16; Page 15 line 1 through Page 16 line 5; Page 19, line 20 through Page 21, line 22, and Figs. 2-3 and 5).

The network of Claim 18 offers significant advantages over prior approaches. As important events occur in the cluster, the events percolate through the cluster and arrive at the event buffer. Thus, in quiet periods when no events are detected, no network resources are wasted passing around events consisting of empty messages. The remote event monitor interacts with the server only when it is likely that the server will have updated status

information for the first node. At the same time, the updated status information for the nodes is obtained very shortly after it is available. Thus, the network of Claim 18 is able to obtain updated status information for the nodes in a timely fashion without unnecessarily congesting the network.

CLAIMS 45 AND 53

Claims 45 and 53 provide an innovative method and apparatus, in which updated status information from a server is sought only when it is likely that the server has updated status information regarding one or more components. According to the approach recited in Claim 45, a set of status information is obtained from a server. This status information pertains to one or more components. A display is rendered that shows the status information for the one or more components. An event buffer is accessed, wherein the event buffer stores one or more events pertaining to the one or more components. A determination regarding whether the event buffer contains any newly added events that require the display to be updated is made. If the determination indicates the event buffer contains one or more newly added events that require the display be updated, then updated status information pertaining to the one or more components is obtained from the server. Then an updated display showing the updated status information for the one or more components is rendered. (Specification at Page 4, line 14 through Page 6 line 1; Page 11, line 4 through Page 13 line 8; Page 15 line 1 through Page 15 line 10; Page 22, line 1 through Page 23 line 23, and Figs. 2-3 and 6).

Claim 53 is directed to the apparatus corresponding to the machine-implemented method of Claim 45, with elements claimed in means plus function form. Accordingly, in

addition to the summary of Claim 45 above, the corresponding structure for each element is as follows:

means for obtaining: event monitor 240, Page 22 lines 7-14, in conjunction with computing system 700, Page 23 line 9 through Page 25 line 2;

means for rendering: computing system 700, Page 21 lines 16-22, Page 22, lines 10-14; Page 24 line 9 through Page 25 line 2;

means for accessing: event monitor 240, Page 22, line 16 through Page 23 line 9, in conjunction with computing system 700, Page 23 line 9 through Page 25 line 2

means for determining: event monitor 240, Page 23, lines 9-12, in conjunction with computing system 700, Page 23 line 9 through Page 25 line 2;

means for obtaining: event monitor 240, Page 23, lines 12-16, in conjunction with computing system 700, Page 23 line 9 through Page 25 line 2; and

means for rendering: computing system 700, Page 23 lines 18-22; Page 24 line 9 through Page 26 line 2.

The machine-implement method of Claim 45 and the apparatus of Claim 53 offer significant advantages over prior approaches. A user is able to monitor the network through the server and control the events requiring a display update. Under this approach, unnecessary network traffic is eliminated when a component triggers a new event that is not deemed to require the graphic display be updated. The user need not worry about manually setting and fine tuning a frequency for automatic graphic display updates. Use of network resources for monitoring is minimized.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 45-49, 52-57 and 60 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. Pub 2004/0019736 ("Chen").

2. Claims 1, 7, 11-13, 17-20, 22-23 and 25-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,748,884 ("Royce") in view of Chen.

3. Claims 3-5, 8-10 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Royce in view of Chen, and further in view of U.S. Pat. Pub. 2003/0037136 ("Labovitz").

4. Claims 14-16 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Royce in view of Chen, and further in view of U.S. Patent 6,823,359 ("Heidingsfeld").

5. Claim 24 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Royce in view of Chen, and further in view of U.S. Pat. Pub. 2004/0111507 ("Villado").

6. Claims 50-51 and 58-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen in view of Heidingsfeld.

VII. ARGUMENT

A. Introduction

Although the claims in this application stand rejected with regard to a variety of references cited in the Office action, the failure of the rejections to establish a prima facie basis can be traced back to the Office action's faulty reliance on Chen. As shown below, Chen fails to teach or suggest all features of Appellants' claimed invention. Additionally, the Office action misapplies Chen in the rejections of all Appellants' independent claims, and takes contradictory positions within the same claim rejection regarding what Chen teaches.

The discussion regarding both the disclosure of Chen and the faults of the current rejections are made below with respect to Claims 45 and 53.

B. Chen Fails to Teach or Suggest All Elements of Claim 45 and Claim 53

Appellants' Claim 45

Claim 45 is directed to a machine-implemented method, Claim 53 is directed to the corresponding apparatus. Although summarized above and provided in the appendix, Claim 45 is reproduced for the convenience of the Board and the Examiner. Claim 45 recites the following (emphasis added):

> A machine-implemented method, comprising:
> obtaining, from a server, a set of status information pertaining to one or more components;
> rendering a display to show the status information for the one or more components;
> accessing an event buffer, wherein the event buffer stores one or more events pertaining to the one or more components;
> determining whether the event buffer contains any newly added events that require the display to be updated;
> in response to a determination that the event buffer contains one or more newly added events that require the display to be updated, obtaining from the server a set of updated status information pertaining to the one or more components; and

rendering an updated display to show the updated status information for the one or more components.

Claim 45 provides an advantageous method for determining when to consult a server to obtain updated status information pertaining to one or more components. With the method of claim 45, it is possible to consult the server only when updated status information is available. By doing so, network traffic is kept to a minimum, and server resources are used more efficiently (i.e. the server is not invoked when no updated status information is available).

According to the method of claim 45, a set of status information pertaining to one or more components is obtained from a server. This set of status information is rendered in a display. The method thereafter accesses an event buffer, wherein the event buffer stores one or more events pertaining to the one or more components. A determination is made as to whether the event buffer contains any newly added events that require the display to be updated. In response to a determination that the event buffer does contain one or more newly added events that require the display to be updated, a set of updated status information pertaining to the one or more components is obtained from the server. An updated display is then rendered to show the updated status information for the one or more components. By obtaining the updated status information from the server in response to a determination that the event buffer contains one or more newly added events that require the display to be updated, the method of claim 45 consults the server when it is known that updated status information for the one or more components is available. By doing so, the method of claim 45 keeps network traffic to a minimum, and uses the server resources more efficiently. Such a method is neither disclosed nor

suggested by Chen.

The Disclosure of Chen

In contrast, Chen discloses a method for displaying events of a network device. In Chen, a network device 6 (Fig. 1 of Chen) is coupled to an administrative workstation 2 via a connection 4. The network device 6 has an event managing module 66 and a storage 68, and the administrative workstation 2 has an event obtaining module 24 and a database 28. In operation, the event managing module 66 detects events on the network device 6. When an event is detected, the event managing module 66 determines whether the event needs to be displayed (see paragraph 0022 of Chen). If the event needs to be displayed, then the event managing module 66 stores information pertaining to the event into the storage 68 (see paragraph 0022).

Periodically, the event obtaining module 24 of the administrative workstation 2 accesses the storage 68 on the network device 6 (see paragraph 0021), and obtains information pertaining to a detected event (see paragraph 0022). The administrative workstation 2 stores this event information into the database 28, and displays the event information on an event information page (see paragraph 0022). By doing so, the administrative workstation 2 is able to detect and display events pertaining to the network device 6.

The Claimed Features Missing from Chen

Several points should be noted with regard to Chen. First of all, it should be noted that, unlike Claim 45, Chen makes absolutely no mention of a server from which status information pertaining to one or more components may be obtained. The storage 68 of Chen may be interpreted as the event buffer of Claim 45 since storage 68 does

contain information pertaining to events; however, there is nothing in Chen that can reasonably be interpreted as the server recited in Claim 45 from which status information pertaining to the one or more components may be obtained.

Another point to note is that, unlike Claim 45, Chen neither discloses nor suggests obtaining a set of updated status information pertaining to the one or more components from a server in response to a determination that the event buffer contains one or more newly added events. In Chen, when the administrative workstation 2 detects event information in the storage 68, it simply takes that event information and displays it in an event information page. This is made perfectly clear at the end of paragraphs 0010 and 0022 of Chen. Unlike Claim 45, the administrative workstation 2 of Chen does not, in response to a determination that the storage 68 contains one or more newly added events, obtain from a server a set of updated status information pertaining to the network device 6. In Chen, it is the event information that is displayed by the administrative workstation 2. Since this event information is already obtained from storage 68, there is no need for the administrative workstation 2 to consult any other component to obtain any other set of information. Thus, in sharp contrast to Claim 45, the administrative workstation 2 of Chen does not obtain updated status information from a server, nor does it render this updated status information in a display.

The Errors in the Rejections Based on Chen

Figure 1 of Chen illustrates the embodiment of the system corresponding to the paragraphs of Chen cited in the Office action. Although Fig. 1 only illustrates one network device 6, the system in Chen includes a plurality of network devices. The server could be located either in administrative workstation 2 or (one) network device 6.

In the rejection of different limitations of Claim 45, the Office Action interprets the "server" to reside in different locations of the system disclosed in Figure 1 of Chen. First, in the analysis of the feature of "obtaining, from a server, . . .," the Office action states that "Chen et al shows a server obtains event information (paragraph 21)." In paragraph 0021, only administrative workstation 2 appears to obtain event information through its event obtaining module 24; thus it appears the Office action correlates Appellants' claimed server to administrative workstation 2.

Later, in the analysis of the feature "in response to a determination that . . .," the Office action now appears to locate the mythical server in Chen at network device 6. The Office action's entire correlation of this claimed feature consists of the following sentence: "Chen et al shows the event is obtained from the server and displayed by the administrative workstation (paragraph 22)." Now the Office action appears to indicate the mythical server of Chen is separate and distinct from administrative workstation 2. Thus it could only reside on network device 6. In a rejection of a single claim, the Office action has interpreted the server to reside both on administrative workstation 2 and network device 6. The logic used in the rejection is self-contradictory.

Appellants respectfully submit that the reasoning of Office action is fundamentally in error, as the Office action takes contradictory positions regarding the location of the "server" in Chen.

Prayer for Relief for Claims 45-60

As (1) Chen lacks elements of Appellants' claimed method, (2) the Office action fails to provide a logical correlation between the disclosure of Chen and Appellants' claimed method, and (3) the system of Chen suffers some of the very deficiencies that Appellants'

claimed method solves, Appellants submit the final Office action has failed to establish a prima facie basis upon which to reject independent method Claim 45, corresponding independent apparatus Claim 53, and dependent Claims 46-52 and 54-60.

Therefore, Appellants respectfully request that the Honorable Board reverse the rejections of Claims 45-60.

C. The Combination of Royce and Chen Fails to Teach or Suggest Appellants' Claim 1

Claim 1 is directed to a system for event notification. Although summarized above and provided in the appendix, Claim 1 is reproduced for the convenience of the Board and the Examiner. Claim 1 recites the following (emphasis added):

> A system for event notification, comprising:
> an event buffer;
> a first node, the first node detecting a situation of interest on the first node and generating a first event in response thereto, the first node sending information pertaining to the first event to the event buffer to be stored therein; and
> a remote computing system, the remote computing system displaying a first set of status information for the first node that was previously obtained from a server, the remote computing system polling the event buffer for new events and in response to detecting the first event, the remote computing system interacting again with the server to obtain therefrom a set of updated status information for the first node, the remote computing system thereafter displaying the updated status information.

The final Office action admits that Royce fails to teach "a remote computing system…the remote computing system polling the event buffer for new events and in response to detecting the first event, the remote computing system interacting again with the server to obtain therefrom a set of updated status information for the first node, the remote computing system thereafter displaying the updated status information" (Emphasis added). The Office action attempts to compensate for Royce's shortcomings

by citing Chen. However, Appellants respectfully submit that Chen also fails to disclose or suggest the remote computing system of Claim 1.

As argued above in connection with Claim 45, the administrative workstation 2 of Chen (which the examiner is interpreting to be the remote computing system of Claim 1) does not interact with a server in response to detecting an event in the storage 68 of the network device 6 (see Fig. 1 of Chen). Rather, when the administrative workstation 2 detects an event in the storage 68, it simply takes that event information and displays it in an event information page (see paragraphs 0010 and 0022 of Chen).

As noted above, it is the event information itself, not any updated status information pertaining to the network device 6, that is displayed by the administrative workstation 2. Since the administrative workstation 2 does not interact with a server to obtain a set of updated status information for the network device 6, it should come as no surprise that the administrative workstation 2 also does not display any such updated status information. For at least the above reasons, Appellants submit that Chen does not disclose or suggest the remote computing system of Claim 1.

Since neither reference teaches or suggests at least the remote computing system of Claim 1, even if the references were combined (assuming for the sake of argument that it would have been obvious to combine the references), the combination still would not yield the system of Claim 1. Appellants respectfully submit that the Office action fails to establish a prima facie case of obviousness for Claim 1, or its dependent Claims 2-17. Therefore, Appellants respectfully request that the Honorable Board reverse the rejections of Claims 1-17.

D. The Combination of Royce and Chen Fails to Teach or Suggest Appellants' Claim 18

Claim 18 is directed to a network for event notification. Although summarized above and provided in the appendix, Claim 18 is reproduced for the convenience of the Board and the Examiner. Claim 18 recites the following (emphasis added):

> A network for event notification, comprising:
> an event forwarding mechanism in each node of a cluster for forwarding detected events to each other node;
> an event buffer of said cluster to receive and store each event forwarded from a node from an event forwarding mechanism; and
> a remote event monitor for periodically polling said event buffer for changes in pertinent events, and in response to detecting one or more new pertinent events, the remote event monitor causing updated status information pertaining to one or more nodes in said cluster to be obtained from a server and causing the updated status information to be displayed.

The final Office action admits that Royce fails to teach "a remote event monitor for periodically polling said event buffer for changes in pertinent events, and in response to detecting one or more new pertinent events, the remote event monitor causing updated status information pertaining to one or more nodes in said cluster to be obtained from a server and causing the updated status information to be displayed" (Emphasis added). The Office action then attempts to compensate for Royce's shortcomings by citing Chen. However, Appellants respectfully submit that Chen also fails to disclose or suggest the remote event monitor of Claim 18.

In contrast to the remote event monitor of Claim 18, the administrative workstation 2 of Chen (which the examiner is interpreting to be the remote event monitor of Claim 18) does not, in response to detecting one or more new pertinent events, cause updated status information pertaining to one or more nodes to be obtained from a server. Rather, when the administrative workstation 2 detects an event in the storage 68, it simply

takes that event information and displays it in an event information page (see paragraphs 0010 and 0022 of Chen). There is absolutely no mention of the administrative workstation 2 causing updated status information pertaining to one or more nodes to be obtained from a server in response to detecting one or more new pertinent events.

Furthermore, there is no mention of the administrative workstation 2 displaying updated status information. As noted above, it is the event information itself, not any updated status information pertaining to one or more nodes, that is displayed by the administrative workstation 2. Since the administrative workstation 2 does not interact with a server to obtain updated status information, it should come as no surprise that the administrative workstation 2 also does not display any such updated status information. For at least the above reasons, Appellants submit that Chen does not disclose or suggest the remote event monitor of Claim 18.

Since neither reference teaches or suggests at least the remote event monitor of Claim 18, even if the references were combined (assuming for the sake of argument that it would have been obvious to combine the references), the combination still would not yield the network of Claim 18. Appellants respectfully submit that the Office action fails to establish a prima facie case of obviousness for Claim 18, or its dependent Claims 19-26. Therefore, Appellants respectfully request that the Honorable Board reverse the rejections of Claims 18-26.

E. Conclusion and Prayer for Relief

Based on the foregoing, it is respectfully submitted that the rejections of Claims 1-26 and 45-60 are improper and lack the requisite factual and legal bases. Therefore, Appellants

respectfully request that the Honorable Board reverse the rejections of Claims 1-26 and 45-60.

Respectfully submitted,

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VIII. Claims Appendix

1. A system for event notification, comprising:

an event buffer;

a first node, the first node detecting a situation of interest on the first node and generating a first event in response thereto, the first node sending information pertaining to the first event to the event buffer to be stored therein; and

a remote computing system, the remote computing system displaying a first set of status information for the first node that was previously obtained from a server, the remote computing system polling the event buffer for new events and in response to detecting the first event, the remote computing system interacting again with the server to obtain therefrom a set of updated status information for the first node, the remote computing system thereafter displaying the updated status information.

2. The system for event notification of Claim 1 wherein the event buffer comprises a database for storing received events.

3. The system for event notification of Claim 2 wherein the database is pruned.

4. The system for event notification of Claim 3 wherein the pruning is carried out at timed intervals.

5. The system for event notification of Claim 4 wherein the pruning is carried out at said time intervals of between 2 and 120 seconds.

6. The system for event notification of Claim 1 further comprising:

a second node, the second node detecting a situation of interest on the second node and generating a second event in response thereto, the second node sending information pertaining to the second event to the event buffer to be stored therein.

7. The system for event notification of Claim 6 wherein the event buffer comprises a database for storing received events.

8. The system for event notification of Claim 7 wherein the database is pruned.

9. The system for event notification of Claim 8 wherein the pruning is carried out at timed intervals.

10. The system for event notification of Claim 9 wherein the pruning is carried out at said time intervals of between 2 and 120 seconds.

11. The system for event notification of Claim 6 wherein the second node comprises a second event buffer, and wherein the second event buffer receives events transmitted from at least one of the first node and the second node.

12. The system for event notification of Claim 11 wherein the event buffer comprises a first list of significant events and wherein the second event buffer comprises a second list of significant events.

13. The system for event notification of Claim 1 wherein the remote computing system renders a graphic display to show the first set of status information and/or the updated status information.

14. The system for event notification of Claim 13 wherein the graphic display is rendered by a stand-alone application.

15. The system for event notification of Claim 13 wherein the graphic display is a web page rendered by a web browser.

16. The system for event notification of Claim 15 wherein the web browser comprises plug-ins.

17. The system for event notification of Claim 13 wherein the graphic

display is rendered by an application that is integrated with at least one of an event monitor, and the event buffer.

18. A network for event notification, comprising:

an event forwarding mechanism in each node of a cluster for forwarding detected events to each other node;

an event buffer of said cluster to receive and store each event forwarded from a node from an event forwarding mechanism; and

a remote event monitor for periodically polling said event buffer for changes in pertinent events, and in response to detecting one or more new pertinent events, the remote event monitor causing updated status information pertaining to one or more nodes in said cluster to be obtained from a server and causing the updated status information to be displayed.

19. The network of Claim 18 further comprising:

an event generation mechanism in each node to generate an event when something of interest occurs within said cluster.

20. The network of Claim 18 wherein said updated status information is displayed within a web page.

21. The network of Claim 18 wherein said event buffer further comprises:

a database for storing events received from said event forwarding mechanisms; and

an evictor for periodically removing events from said database.

22. The network of Claim 18 wherein said remote event monitor resides within a browser system.

23. The network of Claim 18 wherein said event buffer is located on at least one node in said cluster.

24. The network of Claim 18 wherein said remote event monitor is a Java applet operating on a computing system remote from said cluster.

25. The network of Claim 20 wherein said web page registers pertinent events with said remote event monitor.

26. The network of Claim 18 wherein said updated status information is displayed in a frame of a displayed web page.

27-44. Canceled

45. A machine-implemented method, comprising:

obtaining, from a server, a set of status information pertaining to one or

more components;

rendering a display to show the status information for the one or more components;

accessing an event buffer, wherein the event buffer stores one or more events pertaining to the one or more components;

determining whether the event buffer contains any newly added events that require the display to be updated;

in response to a determination that the event buffer contains one or more newly added events that require the display to be updated, obtaining from the server a set of updated status information pertaining to the one or more components; and

rendering an updated display to show the updated status information for the one or more components.

46. The method of claim 45, wherein the one or more components are one or more nodes in a cluster of nodes.

47. The method of claim 45, wherein the server is a web server, and wherein obtaining the set of status information comprises:

loading a web page from the web server that includes the status information for the one or more components.

48. The method of claim 47, wherein obtaining the set of updated status information comprises:

loading an updated web page from the web server that includes the updated status information for the one or more components.

49. The method of claim 47, wherein loading the web page comprises:

registering a set of one or more pertinent events as events that require the display to be updated.

50. The method of claim 49, wherein the web page comprises code for causing the set of one or more pertinent events to be registered.

51. The method of claim 50, wherein the code is Javascript code.

52. The method of claim 49, wherein determining whether the event buffer contains any newly added events that require the display to be updated comprises:

determining whether the event buffer contains any newly added events; and

in response to a determination that the event buffer contains one or more newly added events, determining whether any of the one or more newly added events is one of the events in the set of one or more pertinent events.

53. An apparatus, comprising:

means for obtaining, from a server, a set of status information pertaining to one or more components;

means for rendering a display to show the status information for the one or more components;

means for accessing an event buffer, wherein the event buffer stores one or more events pertaining to the one or more components;

means for determining whether the event buffer contains any newly added events that require the display to be updated;

means for obtaining from the server, in response to a determination that the event buffer contains one or more newly added events that require the display to be updated, a set of updated status information pertaining to the one or more components; and

means for rendering an updated display to show the updated status information for the one or more components.

54. The apparatus of claim 53, wherein the one or more components are one or more nodes in a cluster of nodes.

55. The apparatus of claim 53, wherein the server is a web server, and wherein the means for obtaining the set of status information comprises:

means for loading a web page from the web server that includes the status information for the one or more components.

56. The apparatus of claim 55, wherein the means for obtaining the set of updated status information comprises:

means for loading an updated web page from the web server that includes the updated status information for the one or more components.

57. The apparatus of claim 55, wherein the means for loading the web page comprises:

means for registering a set of one or more pertinent events as events that require the display to be updated.

58. The apparatus of claim 57, wherein the web page comprises code for causing the set of one or more pertinent events to be registered.

59. The apparatus of claim 58, wherein the code is Javascript code.

60. The apparatus of claim 57, wherein the means for determining whether the event buffer contains any newly added events that require the display to be updated comprises:

means for determining whether the event buffer contains any newly added events; and

means for determining, in response to a determination that the event buffer contains one or more newly added events, whether any of the one or more newly added events is one of the events in the set of one or more pertinent events.

IX. Evidence Appendix

None

X. Related Proceedings Appendix

None